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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/755,687	01/05/2001	Alain Benayoun	FR919990107US1	4006

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EXAMINER
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PATHAK, SUDHANSHU C

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 08/12/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/755,687

Applicant(s)

BENAYOUN ET AL.

Examiner

Sudhanshu C. Pathak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on May 21<sup>st</sup>, 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 26-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on May 21<sup>st</sup>, 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

1. Claims 26-to-36 are pending in the application.
2. Claims 1-to-25 have been cancelled.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 26-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (AAPA) in view of Seazholtz (5,812,786) in further view of Polley et al. (5,999,563) in further view of Matsumoto (PG-PUB No. 2002/0067811).

Regarding to Claims 26-35, the Applicant Admitted Prior Art (AAPA) discloses an Asymmetric Digital Subscriber Line (ADSL) system comprising a central exchange equipment (CE) connected to a service provider network and a user equipment (UE) connected to a user workstation, wherein said CE and said UE are interconnected by a PSTN link, said CE including an input line for transmitting high-speed data from said service provider network to said user workstation and an output line for receiving medium-speed data from said user workstation and further comprising CE coding/decoding means for coding said high-speed data and decoding said medium-speed data, said UE including an input line for transmitting medium-speed data from said user workstation to said service provider network and an output line

for receiving high-speed data from said service provider network and also including UE coding/decoding means for coding said medium-speed data and decoding said high-speed data (Fig. 2A & Specification, Page 9, lines 24-31 & Page 10, lines 1-9). The AAPA further discloses a splitter coupled to both the CE and the UE which splits/merges the low bandwidth voice signals with the high bandwidth data signals (Fig. 1, elements 18, 24 & Fig. 2A, elements 18, 24 & Specification, Page 9, lines 9-31). However, the AAPA does not disclose transmitting an inverting request message from the UE to the CE, and in response to the receiving the inverting message activating the coding/decoding means for coding medium-speed data on the CE input line and decoding high-speed data on the CE output and further transmitting a first acknowledgement message from the CE to the UE informing the UE that transmission in reverse mode is authorized and then the UE upon receiving the first acknowledgement transmitting the second acknowledgement from the UE to the CE.

Seazholtz discloses a variable rate and a variable mode ADSL transmission system comprising a central exchange equipment (CE) and a user equipment (UE) (Abstract, lines 1-14 & Fig. 1 & Column 2, lines 45-67 & Column 3, lines 1-20 & Column 12, lines 3-30). Seazholtz further discloses transmitting an inverting request message from the UE to the CE to transmit high speed data from the UE to the CE (Column 3, lines 35-60 & Column 12, lines 5-30 & Column 13, lines 65-67 & Column 14, lines 1-67); and in response to the inverting request message, activating the CE coding/decoding means for coding medium-speed data on the CE input line and

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decoding high-speed data on the CE output line (Column 8, lines 17-20 & Column 10, 35-45 & Column 12, lines 5-30, 55-62 & Fig. 6-7, elements "Decoder / Error Correction"). Seazholtz further discloses the inverting message transmitted from the UE to the CE to be a control message transmitted in a control channel multiplexed with data (Column 13, lines 54-67 & Fig. 6-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Seazholtz teaches an ADSL transmission system operating in multiple modes as chosen by the subscriber, by transmitting a request as a control message over a control channel, including inverting mode wherein the UE transmits at high data rate and the CE transmits at a medium data rate, and can be implemented in the system as described in the AAPA and the appropriate coding / decoding modules can be activated to transmit and receive the data in the reverse mode to successfully receive the data in this mode thus providing a configuration useful in applications in which large amounts of information is transmitted to the CE or in communication between UE's through the CE. However, AAPA in view of Seazholtz does not disclose transmitting "ack" messages upon receiving the request messages.

Polley discloses a rate negotiation for a variable rate DSL signaling implemented at the beginning of the communication session through the exchange of tones between the modems (Abstract, lines 7-16 & Column 5, lines 27-39). Polley also discloses a process of handshake for synchronization the subscriber and central office modems (Column 4, lines 40-48 & Column 8, lines 46-51) to include a respond / confirm acknowledgement schemes (Column 13, lines 2-7 & Fig. 3d-e & Column

21, lines 30-50 & Column 14, lines 43-67). Polley further discloses transmitting multiple tones from the UE for signaling data transmission rates and other control messages (Column 13, lines 8-35 & Column 14, lines 5-25 & Column 21, lines 30-50). Polley further discloses exchanging multiples tones between the UE and the CE wherein both the UE and the CE detect the transmitted tones and respond appropriately either with another tone as a conformation or data (Column 14, lines 43-64). Polley further discloses allocation of a control channel used to send and receive all control information including rate negotiation information (Column 20, lines 35-40). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that implementing the protocol as described Polley in the system as described in AAPA in view of Seazholtz provides an acknowledgement scheme between the CE and the UE, wherein the ack messages are transmitted back and forth so as to provide multiple messaging signals and synchronization between the modems for more accurate reception of the data exchange.

Furthermore it is obvious to one of ordinary skill that a tone decoder and a tone generator are needed to generate (transmit) and detect (receive) the tones implemented in the system as described in Polley. Therefore, the AAPA in view of Seazholtz in further view of Polley satisfies the limitations of the claims. However, AAPA in view of Seazholtz does not disclose the splitter to include a low pass filter for separating the low frequency voice signals from the high frequency ADSL signals transmitted.

Matsumoto discloses an xDSL communication system comprising a central station and a user station both comprising a splitter for multiple communication services including voice and data (Fig. 1, elements 2a, b & Paragraphs 3, 18-20, 27-28, 54-63). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Matsumoto teaches a splitter to include a low pass filter for separating the low frequency voice signals from the high frequency ADSL signals transmitted, and this can be implemented in the system as described in AAPA in view of Seazholtz in further view of Polley, thus satisfying the limitations of the claim.

5. Claim 36, is rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (AAPA) in view of Seazholtz et al. (5,812,786) in further view of Polley et al. (5,999,563) in further view of Matsumoto (PG-PUB No. 2002/0067811) in further view of Kidambi et al. (6,424,626).

Regarding to Claim 36, the Applicant Admitted Prior Art (AAPA) in view of Seazholtz in further view of Polley in further view of Matsumoto discloses a method and apparatus for a variable rate and variable mode DSL transmission employing an acknowledgement message scheme between the UE and the CE as described above. However, the above reference do not disclose an FIFO buffer for storing data that is received by the CE from the network until a second acknowledgement message has been received by the CE from the UE or storing data from the workstation until the first acknowledgement message is received by the UE.

Kidambi discloses a method and system for transmitting data packets over an ADSL line comprising a transceiver further comprising a FIFO buffer to store packets in a queue until it is ready to be transmitted (Column 1, lines 5-15 & Column 6, lines 25-37 & Claim 11). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that implementing an FIFO as described in Kidambi in the system described in AAPA in view of Seazholtz in further view of Polley in further view of Matsumoto to store data while performing an handshake (acknowledgement) between the CE and the UE minimizes the loss of data needed to be transmitted from the CE to the UE or vice versa and further minimizes the latency in the communication exchange due to the inverting of the ADSL system. Furthermore, there is no criticality in the authorization of transmitting in reverse mode in response to FIFO being full prior to second acknowledgement message being received by the CE or the UE authorizing reverse mode in response to FIFO being full this is a matter of design choice of the protocol implementation in an ADSL system and a respective signaling process.

### ***Response to Arguments***

6. Applicant's arguments filed on May 21<sup>st</sup>, 2004 have been fully considered but they are not persuasive. In response to the arguments the above rejection clearly discloses all the cited limitations of the claims. The AAPA and the Matsumoto both disclose the physical components used in the xDSL system and that have been recited in the claims. However the above-mentioned references do not explicitly disclose a tone generator and a tone decoder and a messaging



(signaling) scheme to include "ack" messages upon receiving a request message.

The Polley reference discloses a rate negotiation for a variable rate DSL signaling implemented through the exchange of tones between the DSL modems. Polley further discloses exchanging multiples tones, for signaling data transmission rates and other control messages, between the UE and the CE wherein both the UE and the CE detect the transmitted tones and respond appropriately either with another tone as a conformation or data. Polley also discloses a process of handshake for synchronization between the subscriber and central office modems to include a respond / confirm acknowledgement schemes. Therefore, from reading the Polley reference it would have been obvious to one of ordinary skill in the art at the time of the invention that an xDSL system to include a tone generator and a tone decoder and a signaling mechanism to include a request / ack exchange between the UE and CE. However, the above mentioned references do not disclose sending and receiving an inverting request message from the UE to the CE, and in response to the receiving the inverting message activating the coding/decoding means for coding medium-speed data on the CE input line and decoding high-speed data on the CE output line.

The Seazholtz reference discloses a variable rate and a variable mode ADSL transmission system comprising a central exchange equipment (CE) and a user equipment (UE). Seazholtz further discloses transmitting an inverting request message from the UE to the CE to transmit high speed data from the UE to the CE;

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and in response to the inverting request message, activating the CE coding/decoding means for coding medium-speed data on the CE input line and decoding high-speed data on the CE output line. Seazholtz further discloses the inverting message transmitted from the UE to the CE to be a control message transmitted in a control channel multiplexed with data. Therefore, from reading the Seazholtz reference it would have been obvious to one of ordinary skill in the art at the time of the invention that an xDSL system to include a an inverting messaging wherein the data rate received at the UE is of medium data rate and the data rate transmitted from the UE is high data rate, thus inverting the data rates. However the above reference do not disclose a FIFO buffer for storing data that is received by the CE from the network until a second acknowledgement message has been received by the CE from the UE or storing data from the workstation until the first acknowledgement message is received by the UE.

The Kidambi discloses a method and system for transmitting data packets over an ADSL line comprising a transceiver further comprising a FIFO buffer to store packets in a queue until it is ready to be transmitted. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that implementing an FIFO as described in Kidambi in the system described in AAPA in view of Seazholtz in further view of Polley in further view of Matsumoto to store data while performing an handshake (acknowledgement) between the CE and the UE. Therefore, it would have been obvious to one of ordinary skill in the art at the time of

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the invention that all the references described above are implemented in an xDSL system and disclose all the recited subject matter in the claimed invention.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (703)-305-0341. The examiner can normally be reached on M-F: 9am-6pm.

- If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (703)-305-4714.
- The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sudhanshu C. Pathak



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